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| In Re Patent Application Of | : | |
| Robert McKinnon, Jr. | : | Examiner: N. Eloshway |
| Serial No. 09/579,630 | : | |
| Filing Date: May 26, 2000 | : | Group Art Unit: 3727 |
| "METER BOX LID" | : | |
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DECLARATION OF ROBERT MCKINNON, JR.

Commissioner for Patents
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1. I am Robert McKinnon, Jr., the inventor of the subject patent application. I am over 21 years of age and am competent to make this declaration.
2. This declaration supplements my earlier declarations of October 5, 2001 and February 12, 2004 in this patent application. I continue to be employed by DFW Plastics, Inc., assignee of this application, and am manager of its manufacturing plant. I continue to be familiar with various types of plastic manufacturing, such as injection molding, compression molding, rotational molding and blow molding and am also familiar with vacuum form molding.
3. I wanted to make a plastic lid that satisfied certain ratings. Many customers, such as cities, who buy utility box lids, require the lids to meet certain ratings or specifications. One rating is H-10, which requires a lid to

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hold a load of 8000 pounds. Another rating is H-20, which requires a lid to hold a load of 16,000 pounds. ASTM-C-857-95 applies.

4. I knew that a lid that met a rating of H-10 could not commercially be made by injection molding, vacuum form molding (also known as thermo molding) or blow molding. Each of these types of molding introduces technical problems in the molds and plastic resins. To make a lid that met the H-10 rating, by injection molding, the lid would require glass fibers or structural foam. An injection molded lid that met the H-10 rating would not be feasible.

5. I considered and experimented with compression molding to make a lid that met the H-10 rating. A compression mold has two parts. For example, one mold part has a female component which is a cavity shaped like the product. The other mold part has a male component that closes the cavity. When the cavity is open, the plastic is placed into the cavity. The plastic that is placed into the open cavity is usually a sheet or plastic mat. The plastic is heated before being placed into the cavity. When the cavity is closed, the plastic is compressed between the two mold parts. The compressed plastic is squeezed into all places in the mold cavity and any air bubbles are squeezed out. The plastic is stamped and has no undercuts. Undercuts would mean that the plastic, once molded by compression, could not be removed from the mold.

6. Before my invention, compression molding was widely used to make relatively thin products. Before my invention, the thickest wall that I saw in a compression molded product was about one-fourth of an inch. Compression molding is an inexpensive way to make products that have

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some curve or bend, such as on an automobile bumper. A bumper may have both plastic and metal pieces. The plastic pieces can be compression molded.

7. As I learned from my experimentation with compression molding, if the plastic part is too thick, it is brittle and will not hold the desired load. I considered using glass fibers in the plastic to provide reinforcement, but decided against it.

8. As far as I know, I am the first to utilize compressed plastic in a utility box lid that is capable of withstanding a load of at least 8,000 pounds. To make a lid of that strength, a thick lid is needed. I have found compressed plastic of relatively large wall thickness to be satisfactory. Because of the wall thickness, which is larger or thicker than with traditional compression molded products, I had to make modifications. I did not make the modification of adding glass fiber. Instead, the lid is solid, all plastic, with recesses to allow proper curing of the plastic. As far as I know, I am the first person to make a compression molded lid of all plastic of such strength.

9. I am aware that the Examiner has said the claims, which define the invention, are not patentable because of the prior patents to Hauffe, Marthaler, Goodwin and Bonnema. I have read and understand the patents to Hauffe, Marthaler and Goodwin. Hauffe has a plastic injection molded lid on a meter box. I am familiar with injection molded lids for meter boxes. As I previously mentioned, my father had a patent on an injection molded lid, U.S. Patent No. 4,163,503. I considered these lids when I set out to design a stronger lid. The plastic injection molded lids have a load strength of about 1,200 pounds. That is, the lid will break if they support 1,200

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pounds or more in weight. After reading and looking at Hauffe, I do not see anything that will tell me that the Hauffe lid is any stronger than the injection molded lids I am already familiar with. I would not look to injection molded lids to develop or make a lid with an 8,000 pound rating.

10. The Marthaler patent shows a storage box for computer media, such as compact discs. The box has a housing and a lid. These parts can be made by several different types of molding. The only practical way to make the Marthaler housing and lid is by injection molding. Even though the Marthaler patent says it can use compression molding, this is not true. The housing and lid have undercuts. Once the part is molded, it cannot be removed from the compression mold because of the undercuts. Examples of undercuts are pegs 82 and 84 in Fig. 4, the bores 132 in Fig. 10 that match with the pegs and the latch 179 in Fig. 24. The housing and lid are not blow molded. Blow molding means that gas is blown into a slug of plastic, causing the plastic to expand out into a mold. An example of a blow molded product is a plastic bottle, which is hollow inside. If the housing and lid were blow molded, the housing and lid would have hollow space inside. Thermo molding is where a sheet of heated plastic is pulled down over a mold or form. The undercuts mean that thermo molding is not practical.

11. The Marthaler patent does not tell me any reason why I would use compression molding instead of injection molding, blow molding or thermo molding to make the housing with. At the time of my invention, I would not have looked at the Marthaler patent for guidance on making a lid using compression molding instead of injection molding. The wall thickness of the Marthaler lid looks too thin for what I was trying to accomplish. The

Marthaler patent tells me nothing about making a strong lid, capable of withstanding 8,000 pounds of load, with compression molding. I would not have looked to either Hauffe or Marthaler to make the lid. I would not have looked to Hauffe or Marthaler to make an all plastic lid capable of withstanding a load of 8,000 pounds with any kind of compression molding.

12. The Goodwin patent is a blow molded lid that has recesses. A blow Molded lid is weaker than an injection molded lid. I would not look to the Goodwin lid to make the Hauffe lid stronger.

13. I hereby declare that all statements made herein of my own personal knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any resulting patent issuing thereon.

2/10/06

Date

Robert McKinnon, Jr.

By: Robert McKinnon, Jr.

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